

BROOKHAVEN NATIONAL LABORATORY		Number: LS-SDL-0005	Revision: C
NATIONAL SYNCHROTRON LIGHT SOURCE		Effective: 10-22-2004	Page 1 of 4
Subject: SDL Radiation Search Procedure			
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Refer to drawing SDL-561.2-1-4 for location of interlock components and search pattern.
A condition for interlocking the SDL linac area is that the radiation interlock for the gun hutch be in a secured state.

Interlocking the gun hutch:

1. Close the left gun hutch door and secure the Kirk lock.
2. Enter the gun hutch using the right door and search the area for personnel and announce the area is being searched.
3. When assured there are no personnel in the gun hutch press the CS-1 button.
4. Exit the gun hutch and secure the Kirk lock on the door, press the CS-E button.
5. The audible warning will sound for 30 seconds and the Interlocked sign will light.
6. Place the two Kirk keys in the transfer block outside the linac area.

Interlocking the Linac area:

1. Check that the labyrinth door is closed, if not close the door, secure the Kirk lock and remove the key.
2. Place the labyrinth door key in the transfer block.
3. Enter the linac area using the main door and close the door.
4. Press the door guard button and note the led lights when the button is pressed.
5. Proceed towards the end of the linac (west) and inspect the areas behind the linac sections for personnel, using the mirrors located on the north wall behind the linac sections. There are a total of seven mirrors. Remember to make announcements while conducting the search.
6. At the end of the accelerator enclosure cross under the beam pipe and proceed back down towards the gun on the north side of the linac.
7. Visually inspect the area behind the linac looking all the way down to the gun area, Press the CS-1 button after assuring no personnel are encountered and note the led lights when the button is pressed.
8. Proceed towards the down stream end of the linac to CS-2 and press the button, note the led lights when the button is pressed.

9. Proceed to the light curtain, pass through and press CS-3, note the green led lights when the button is pressed.
10. Proceed to the labyrinth area, verify that there are no personnel in the labyrinth, press the CS-4 button and note the led lights when the button is pressed.
11. Proceed to the main entrance and press the door guard button, note the led lights when the button is pressed, open the door and exit the linac area.
12. Close the door, rotate and remove the Kirk key, place it in the transfer unit.

13. Remove the transfer key and place it in the solenoid release unit, rotate the key fully clock wise and then press the CS-E button. Note the led lights when the button is pressed.

Note: Steps 7 through 13 must be completed within the set search time period. A new search will need to be conducted if allowable time period is exceeded.

14. The audible warning will sound for 30 seconds at the end of the warning the system will indicate an interlocked. Take note that the Warning Light Bank 1 and Bank 2 led's are lit. If either led is not illuminated contact the NSLS interlocks group. Observe that the warning sign located by the Interlock logic box is illuminated. If the sign is not illuminated contact the NSLS interlock group.

Bringing the linac interlock to the ground state:

1. Located on the main interlock box is the Interlock Off button, press the interlock off button to bring the system to the unsecured state.
2. Press the button located on the SRU and rotate the Kirk key fully counter clockwise while the button is pressed, then remove the key.
3. Place the key in the transfer block and rotate it counter clockwise, remove the key for the door and use it to enter the linac area.

Bringing the gun hutch interlock to the ground state:

1. Using the key from the transfer unit open the door to the gun hutch and enter.

Locking out the system for maintenance:

Bring the interlock to the ground state using the Interlock Off button. Rotate the lock out switch located on the main interlock box to the OFF position and apply the proper Red tag and lock.